

K. Palani 5/2/16
(K. Palani)
AP/Mech

**SRI CHANDRASEKHARENDRA SARASWATHI
VISWA MAHA VIDYALAYA**

(University u/s 3 of the UGC Act 1956)
(Accredited with "B" Grade by NAAC)
ENATHUR, KANCHIPURAM- 631 561. Tamilnadu, India.

DEPARTMENT OF MECHANICAL ENGINEERING



-: Prepared by :-
Mr. K.Palani
Mr.K.Mohan
Dr.R.Vinayagamoorthy

Assisted By
Mr.C.Rajendiran

**"FLUID MECHANICS AND MACHINERY
LABORATORY"**

Name : _____

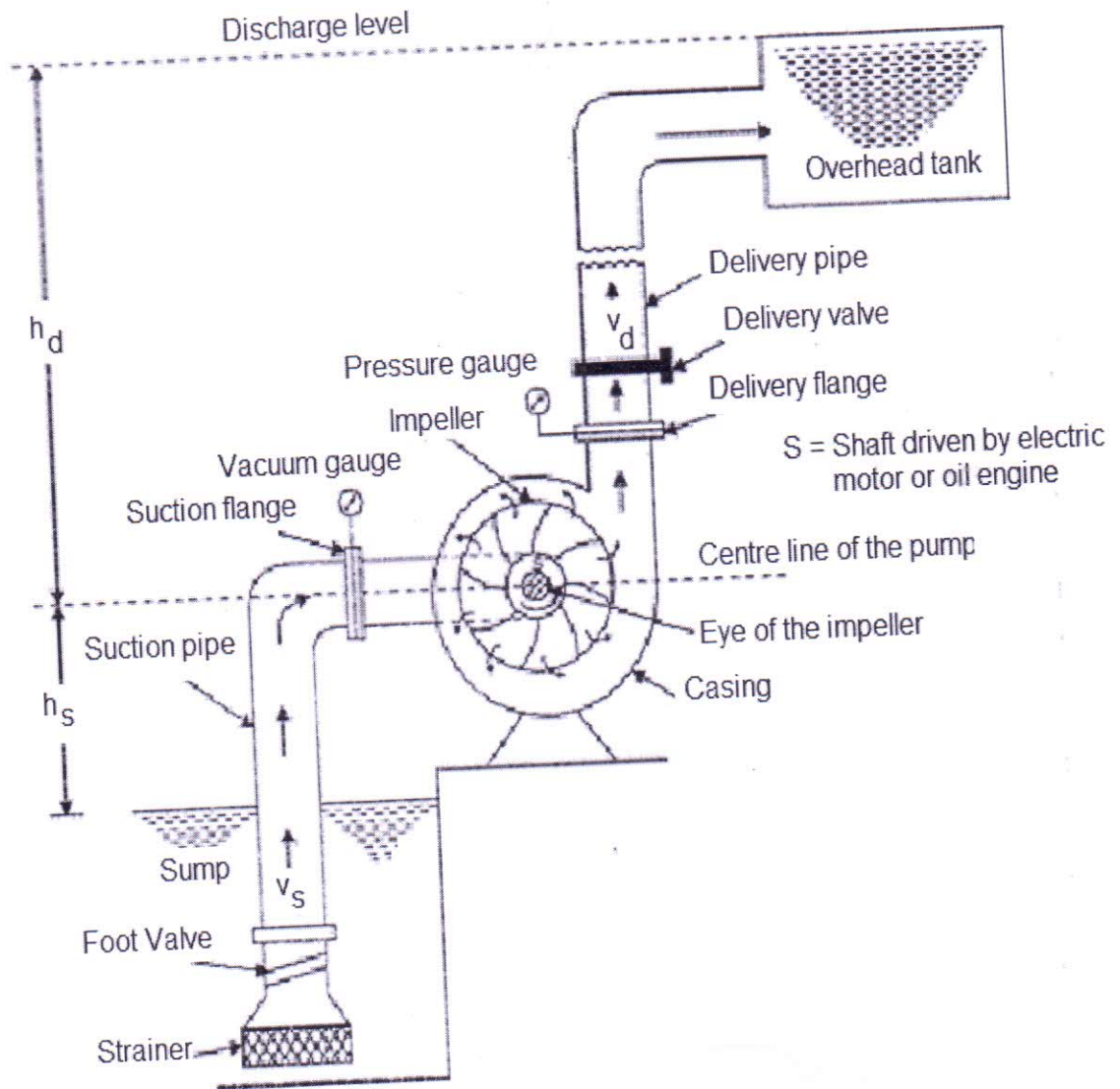
Register No. : _____

Year : II Year Sec : _____

Semester : IV

LIST OF EXPERIMENTS

1. Performance of study of centrifugal pump (Rated speed)
2. Performance of study of reciprocating pump
3. Performance of study of Jet pump
4. Performance of study of submersible pump
5. Performance of study of Pelton wheel turbine (Constant speed)
6. Performance of study of Francis turbine
7. Determination of coefficient of discharge of Triangular Notches
8. Determination of coefficient of discharge of Rectangular Notches
9. Study of major losses in Pipes due to friction
10. Study of minor losses in pipes due to pipe fittings
11. Determination of coefficient of discharge for Orifice Meter
12. Determination of coefficient of discharge for Flow nozzle
13. Determination of the metacentric height of a ship models
14. Measurement of Lift and drag on Aerofoil models



CENTRIFUGAL PUMP

PERFORMANCE OF STUDY OF CENTRIFUGAL PUMP (RATED SPEED)

EXPERIMENT:

DATE:

OBJECTIVES:

The Students are to know the following objectives,

- To study the characteristics of the centrifugal pump at rated speed
- To study the characteristics curves on discharge and efficiency at rated speed

APPARATUS REQUIRED:

- Centrifugal pump
- Stop Watch
- Spanners

DESCRIPTION:

A centrifugal pump consists of an impeller rotating in casing. The impeller has number of curved vanes. Due to centrifugal action imparted by the motion of the impeller, the water enters at the center and flows outwards to the periphery. There it gets collected in a gradually varying passage in the casing known as volute casing.

PROCEDURE:

All the necessary instrumentation along with its accessories is readily connected. It is just enough to follow the instructions given below.

- Fill the sump with clean water
- Keep the speed control knob at zero position
- Switch on the mains such that 'NO' indicator glows
- Balance the torque indicator to zero position
- Now you will find the water starts flowing into the measuring tank
- Select the desired speed (start from the lower speed)
- Using the control knobs as well as digital RPM indicator
- Operate the butterfly valve to note down collecting tank readings against the known time. Open conditions readings are noted down
- Note down the pressure gauge, vacuum gauge, torque indicator, time for number of oscillators of energy meter disc
- After the experiment is over, keep the two valves in open condition

SPECIFICATIONS:

Supply	:	230 V, 15 A, AC, 1 Φ with neutral and earth connections
Motor	:	DC, 1 hp, 1500 RPM
Pump	:	2 hp, 1500 RPM
Pressure gauge	:	2 kg / cm ²
Vacuum gauge	:	0.760 mm of Hg
Torque arm Distance	:	0.1 m
Torque indicator	:	For direct measurement of Torque load cell.

